



# NBII Wildlife Disease Information Node

The node will provide information on wildlife health and wildlife-human-domestic animal disease interactions.

## Background

The National Biological Information Infrastructure (NBII) <[www.nbii.gov](http://www.nbii.gov)> is an electronic information network that provides access to biological data and information on our nation's plants, animals, and ecosystems. Data and information maintained by federal, state, and local government agencies; non-government organizations; and private-sector organizations are linked through the NBII gateway and made accessible to a variety of audiences including researchers, natural resource managers, decision-makers, educators, students, and other private citizens.

Implementation of the NBII is being accomplished through the development of nodes that serve as entry points to the NBII and the information held by partners. These nodes function as fully digital, distributed, and interactive systems that focus on developing, acquiring, and managing content on a defined subject area or a geographic region. The NBII Wildlife Disease Information Node (WDIN) addresses the need for information on a variety of wildlife diseases and their implications, including those affecting wildlife, domestic animals, and humans.

## Wildlife Diseases: An Increasing Concern

Infectious and zoonotic (transmitted between animals and man) diseases of wildlife have long been recognized as



▲ 1973 outbreak of duck plague at Lake Andes National Wildlife Refuge in South Dakota, resulting in the death of over 40,000 mallards.

Photo credit: Milton Friend

having the potential to affect wildlife, domestic animal, and human health. Interest in wildlife diseases has increased recently for a number of reasons:

- Disease is being recognized as a potentially limiting factor affecting wildlife populations.
- Wildlife habitat is decreasing in acreage through modification and destruction, resulting in increased animal densities with increased associated risks of pathogen transmission.
- Wildlife may act as potential reservoirs or amplifiers of disease.
- Human encroachment into wildlife habitat is leading to increased wildlife-human-domestic animal interactions and creating new opportunities for zoonotic disease transmission.
- Scientists are discovering emerging and re-emerging diseases in traditional and new geographic locations.
- Wildlife diseases are moving around the globe with the increasing speed and intensity of international trade of animal species, creating new opportunities for rapid spread of disease.
- There are potential economic impacts

▼ Post-mortem examination of an American crow for West Nile Virus.

Photo credit: USGS NWHC staff



of wildlife diseases on human society.

- Limitations on wildlife re-population and re-introduction programs are being placed due to health concerns for wildlife, domestic animal, and human populations.
- Wildlife can be used as indicators and sentinels for potential human and domestic animal health threats.

## WDIN: A Collaborative Solution

Few wildlife disease databases exist on national or international scales. Further, no central database or information system exists for common access to geospatial and temporal wildlife disease information, which can hamper rapid disease identification, notification, response, and information dissemination.

WDIN is a collaborative project working to develop a Web-based monitoring and reporting system to provide state and federal resource managers, animal disease specialists, veterinary diagnostic laboratories, physicians, public health workers, educators, and the general public with access to data on wildlife diseases, mortality events, and other critical related information. Data are contributed voluntarily, with partners deciding which data they choose to share.

The node is a dynamic and evolving Web resource, reflecting the expanding and continually changing face of wildlife disease. As more partners come together as part of this collaborative project, the resulting distributed wildlife disease data warehouse can be a valuable resource for all to share and use to enhance the understanding, surveillance, management, control, and prevention of wildlife diseases around the world.

## WDIN Objectives

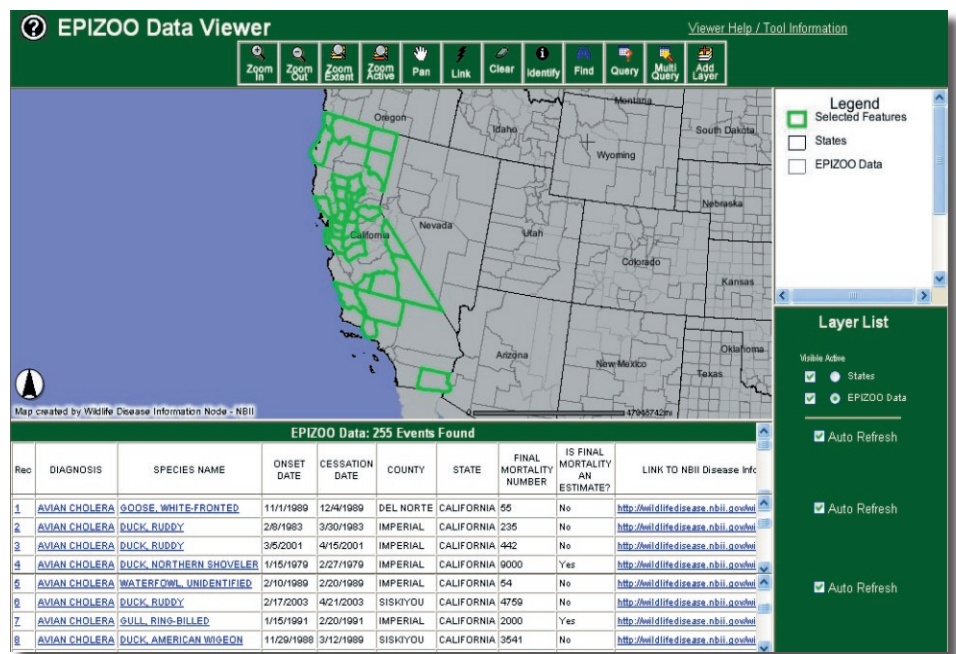
Building partnerships and providing tools to facilitate long-term collaborative efforts in the wildlife disease arena through a Web-based monitoring and reporting system are being pursued to support the following major WDIN objectives:

- Facilitate access to data and information on wildlife and zoonotic diseases;
- Visualize clusters on morbidity and mortality events;
- Track the prevalence and spread of various diseases at the most discrete spatial and temporal levels through interactive GIS mapping and other applications;
- Predict possible new disease appearances;
- Identify previously unrecognized wildlife-human-domestic animal disease relationships;
- Help limit further disease spread; and
- Help prevent future outbreaks.

## Examples of WDIN Projects

### EPIZOO viewer

EPIZOO, a USGS National Wildlife Health Center database of morbidity and mortality reports, is used as the basis for an interactive mapping application <<http://wildlifedisease.nbii.gov/epizoo2/index.htm>>. Users can explore wildlife mortality reports from 1975 to the present using different GIS tools. The identify tool allows users to click on a map and obtain any information available for specific records or locations. Another tool, the query function, allows users to select different parameters for display of data, such as disease, species affected, location, or range of dates (see example above).



▲ Example of EPIZOO geospatial information for avian cholera in California available from <http://wildlifedisease.nbii.gov/epizoo2/viewer.htm>.

### Chronic Wasting Disease Data Clearinghouse (CWDDC)

The CWDDC marks the first time scientists are using new communication tools and GIS technologies to study a wildlife disease on a national scale. This collaborative tool provides a powerful, interactive, and secure platform from which users can access CWD surveillance, research, and testing data. The CWDDC presents a vision for the future of wildlife disease data management using a common set of standards and GIS tools, which

makes entering data and retrieving test results easy and reliable. Clearinghouse partners can expect the following:

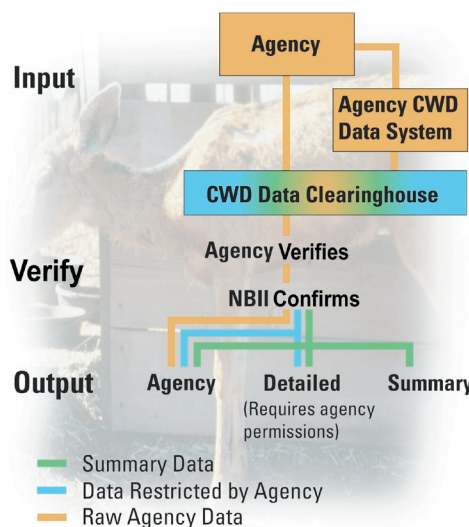
- Integrated, multi-agency CWD monitoring and surveillance data,
- Customized reports by species, age, location, and other selected variables,
- Flexible data views at variable scales,
- Powerful and interactive GIS tools for mapping and analyzing CWD data,
- Graphic presentation of CWD data for more informed management decisions, and
- Integrated tools for spatial analysis.

## For More Information

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Find us on the Web at:  
<<http://wildlifedisease.nbii.gov>>.



## CURRENT CWDDC PARTNERS

Conservation Management Institute ■ Consortium for Conservation Medicine ■ International Association of Fish and Wildlife Agencies ■ Maryland Department of Natural Resources ■ Nebraska Game and Parks Commission ■ Seabird Ecological Assessment Network (SEANET) ■ Southeastern Cooperative Wildlife Disease Study ■ Tennessee Wildlife Resources Agency ■ USGS National Wildlife Health Center ■ University of Wisconsin, School of Library and Information Studies ■ Wildlife Information Network ■ Wisconsin Department of Natural Resources ■ Yale Occupational and Environmental Medicine Program